Computer Exercise 3  
EL2520 Control Theory and Practice

|  |  |
| --- | --- |
| Osqulda Osquldasdotter | Oscar Oscarsson |
| [x@kth.se](mailto:x@kth.se) | [y@kth.se](mailto:y@kth.se) |
| YYMMDD-NNNN | YYMMDD-NNNN |

# Suppression of disturbances

The weight is

Figure : Simulation results with system G, using Ws

How much is the disturbance damped on the output? What amplification is required for a P-controller to get the same performance, and what are the disadvantages of such a controller?

# Robustness

What is the condition on T to guarantee stability according to the small gain theorem, and how can it be used to choose the weight ?

The weights are

Is the small gain theorem fulfilled?

Figure 2: Bode diagram showing the small gain theorem is satisfied

Figure 3: Simulation results with G0, using Ws and Wt

Compare the results to the previous simulation

# Control signal

The weights are

Figure 4: Simulation results

Compare the results to the previous simulations

Figure 5: Simulation results with G0, using Ws , Wt and Wu